**Year 13 Physics**

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| First half term : September till October half term | | | |
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| **Teacher 1** | | **Teacher 2** | |
| Content | Date finished | Content | Date finished |
| 3.8.1.1 -5 Radioactivity |  | Gravitational fields |  |
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|  |  | EOY test for Further mechanics |  |
|  |  | 3.7.3.1 Coulomb's law (A-level only) |  |
| Interleaving quantum |  | 3.7.3.2 Electric field strength (A-level only) |  |
|  |  | 3.7.4.1 Capacitance (A-level only)  (Log graphs to discover power laws) |  |
|  |  | 3.7.4.2 Parallel plate capacitor (A-level only) |  |
|  |  | Interleaving mechanics |  |
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| **Second half term: All of this must be covered by Xmas:** | | | |
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| **Teacher 1** | | **Teacher 2** | |
| 3.8.1.6 Mass and energy (A-level only)  Log graphs to discover power laws |  | 3.7.4.3 Energy stored by a capacitor (A-level only) |  |
| 3.8.1.7 Induced fission (A-level only |  | 3.7.4.4 Capacitor charge and discharge (A-level only) |  |
| 3.8.1.8 Safety aspects (A-level only) |  | Required practical 9: Investigation of the charge and discharge of capacitors. Analysis techniques should include  log-linear plotting leading to a determination of the time constant, RC |  |
| 3.10.1.1 Physics of vision (A-level only) |  | Interleaving electricity |  |
| 3.10.1.2 Defects of vision and their correction using lenses (A-level only) |  | 3.7.5.1 Magnetic flux density (A-level only) |  |
| Interleaving materials |  | Required practical 10: Investigate how the force on a wire  varies with flux density, current and length of wire using a top pan balance. |  |
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| Third half term: All of this must be covered by Feb half term: | | | |
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| Interleaving waves |  | 3.7.5.2 Moving charges in a magnetic field (A-level only) |  |
| 3.10.2.1 Ear as a sound detection system (A-level only) |  | 3.7.5.3 Magnetic flux and flux linkage (A-level only) |  |
| 3.10.2.2 Sensitivity and frequency response (A-level only) |  | 3.7.5.4 Electromagnetic induction (A-level only) |  |
| 3. .10.2.3 Defects of hearing (A-level only) |  | Interleaving further mechanics |  |
| 3.10.3.1 Simple ECG machines and the normal ECG waveform (A-level only) |  | .7.5.5 Alternating currents (A-level only) |  |
| 3.10.4.1 Ultrasound imaging (A-level only) |  | 3.7.5.6 The operation of a transformer (A-level only) |  |

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| Fourth half term : All of this must be covered by Easter: | | | |
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| 3.10.4.2 Fibre optics and endoscopy (A-level only) |  |  |  |
| 3.10.4.3 Magnetic resonance (MR) scanner (A-level only |  | Required practical 11: Investigate, using a search coil and oscilloscope, the effect on magnetic flux linkage of varying  the angle between a search coil and magnetic field direction.  General practicalities of making measurements |  |
| **3.10.5.1 The physics of diagnostic X-rays (A-level only)** |  |  |  |
| **3.10.5.2 Image detection and enhancement (A-level only)** |  | 3.6.2.1 Thermal energy transfer (A-level only) |  |
| **3.10.5.3 Absorption of X-rays (A-level only)**  **3.10.5.4 CT scanner (A-level only)** |  | 3.6.2.2 Ideal gases (A-level only) |  |
| 3.10.6.1 Imaging techniques (A-level only) |  | 3.6.2.3 Molecular kinetic theory model (A-level only) |  |
| 3.10.6.2 Half-life (A-level only) |  | **Required practical 8: Investigation of Boyle's law (constant**  **temperature) and Charles’s law (constant pressure) for a gas.** |  |
| 3.10.6.3 Gamma camera (A-level only) |  | Interleaving particles |  |
| 3.10.6.4 Use of high-energy X-rays (A-level only) |  |  |  |
| 3.10.6.5 Use of radioactive implants (A-level only) |  |  |  |
| 3.10.6.6 Imaging comparisons (A-level only) |  |  |  |
| Interleaving optics |  |  |  |
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| Fifth half term: All of this must be covered by: | | | |
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| Paper 3 prep |  | Paper 3 prep |  |
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